

REMARKS

Claims 1-5 and 10-14 are pending in the application. Claims 6-9 were cancelled in a previous amendment dated April 27, 2006. Claims 1 and 10 have been amended to delete a limitation added in an earlier amendment dated July 7, 2005. Additionally, claim 10 has been amended to recite "said lower electrode layer" for consistency with terminology used elsewhere in the claim. Claim 14 has been amended to correct a typographical error (omission of a space). No new matter has been added by the foregoing amendments.

Claim Rejections – 35 U.S.C. § 103 – claims 1-5 and 10-14

The Examiner has rejected claims 1-5 and 10-14 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Application Publication No. 2002/0135296 (Aziz *et al.*, hereinafter "Aziz") in combination with U.S. Patent Application Publication No. 2002/0070663 (Ogura *et al.*, hereinafter "Ogura").

In particular, regarding independent claim 1, the Examiner states that Aziz discloses a first electrode (a cathode) (Fig. 3, item 38) formed on a substrate (Fig. 3, item 31); a buffer layer (Fig. 3, item 34); a second electrode (an anode) (Fig. 3, item 32); and a protective film layer. Relative to the protective film layer, the Examiner refers to page 5, left hand column, paragraph 0042, lines 23-30:

...
an organic light emitting device wherein the second electrode is a cathode coated with a thermal protective element, and the first electrode is an anode contacting a supportive substrate, or wherein the anode is coated with a thermal protective element; and the cathode is in contact with a supporting substrate; an organic light emitting device comprising...

Applicants note that Aziz thus discloses that the thermal protective element (items 19, 29, 39, and 49 in Figs. 1-4, respectively, see paragraphs 0064, 0065, 0066, and 0067) is disclosed to be positioned on the electrode which is furthestmost from the supporting substrate. In the context of Fig. 3, wherein the cathode 38 (the "first" electrode) is in contact with the supporting substrate 31, it is therefore the anode 32 (the "second" electrode) which is disclosed to be coated with the thermal protective element, or thermal protective layer 39.

The Examiner relies upon Ogura to disclose a buffer layer 206 formed from aluminum oxide (see page 4, paragraph 0074 and Fig. 2). The Examiner asserts that it would have been obvious to a person of ordinary skill in the art to modify Aziz to include a buffer layer as taught by Ogura to be formed from a material, such as aluminum oxide, having a density lower than the density of the luminous layer and the second electrode, for the purpose of preventing moisture from damaging the electroluminescent layer.

Relative to independent claim 10, the Examiner relies again upon Aziz to disclose a first electrode (cathode 38, Fig. 3) adjacent to a substrate (item 31, Fig. 3) and a second electrode (anode 32, Fig. 3). The Examiner states that Aziz further discloses that the second electrode may include an upper electrode layer and a lower electrode layer (paragraph 0074, lines 15-17). The Examiner asserts that Aziz discloses a buffer layer (item 34, Fig. 3) in contact with the second electrode, and disposed between the upper electrode and the lower electrode (of the second electrode), relying upon Fig. 3. The Examiner further relies upon Ogura for disclosure of a buffer layer 206 formed from aluminum oxide, as with claim 1.

Applicants respectfully traverse rejections of claims 1-5 and 10-14.

Aziz discloses various embodiments of an organic light emitting device containing a substrate (11, 21, 31, and 41 in Figs. 1, 2, 3, and 4, respectively); a first electrode (an anode 12, 22, 32, and 42); a second electrode (a cathode 18, 28, 38, and 48); a mixed region (15, 25, 35, and 45); a thermal protective element (19, 29, 39, and 49); a hole transport region (13, 23, 33, and 43), wherein the hole transport region may include a buffer layer (14, 24, 34, and 44); and an electron transport region (16, 26, 36, and 46).

Ogura discloses a light emitting device comprising a buffer layer 206 disposed between a cathode 208 and a light emitting layer 205.

Considering first rejection of claims 1-5, independent claim 1 is directed to an organic electroluminescent device, and, as amended recites, *inter alia*:

...

a buffer layer in contact with said second electrode and
disposed between said second electrode and a protective film layer. (Emphasis added.)

When making a rejection under 35 U.S.C. § 103, the Examiner has the burden of establishing a *prima facie* case of obviousness. The Examiner satisfies this burden only by showing: (1) some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify or combine the references, (2) a reasonable expectation of success, and (3) the prior art references much teach or suggest all of the claim limitations (see MPEP 706.02(j)). The teaching or suggestion to make the claim combination and reasonable expectation of success must be found in the prior art and not from the applicant's disclosure (see MPEP 706.02(j)).

The Examiner has relied upon Ogura to disclose the feature of aluminum oxide used as a buffer layer. Applicants respectfully note that Aziz itself discloses that aluminum oxide may be included in the buffer layer, see Aziz at page 9, left hand column, paragraph 0079, lines 1-7. However, in view of the amendment to claim 1 (as well as to claim 10 discussed below), disclosure in the prior art of the feature of a buffer layer formed from aluminum oxide is no longer relevant. Given that material choice for the buffer layer is not relevant to the subject matter recited in claim 1, as amended, it is not necessary to consider whether Ogura and Aziz are properly combinable under 35 U.S.C. § 103(a) as proposed by the Examiner.

Assuming *arguendo* that Ogura is properly combinable with Aziz, Ogura and Aziz, both in the proposed combination and individually, fail to disclose at least the feature recited in claim 1 of a buffer layer disposed between a second electrode and a protective film layer. In particular, with reference to Fig. 3, Aziz discloses buffer layer 34 being in contact with second electrode (anode) 32 (the first electrode (a cathode) being formed on substrate 31). However, Aziz clearly fails to disclose the buffer layer 34 being disposed **between** the second electrode 32 and the protective film layer 39. Likewise, Ogura clearly fails to disclose buffer layer 206 being disposed **between** cathode 208 and any protective film layer. Accordingly, Aziz and Ogura, either individually or in the proposed combination, fail to teach, disclose or suggest all of the elements of claim 1, and thus all of the elements of claims 2-5 depending from claim 1.

Considering now the rejection of claims 10-14, independent claim 10 is directed to an organic electroluminescent display apparatus including a plurality of organic electroluminescent devices formed on a substrate, and, as amended recites, *inter alia*:

...
electrodes including a first electrode adjacent to the substrate and a second electrode disposed to be spaced from the first electrode, said second electrode comprised of an upper electrode layer and a lower electrode layer;
a function layer formed between the electrodes, said function layer comprising a carrier injection layer, a carrier transport layer luminous layer; and
a buffer layer in contact with the second electrode and **disposed between said upper electrode layer and said lower electrode layer.** (Emphasis added.)

Again assuming *arguendo* that Ogura is properly combinable with Aziz, Ogura and Aziz, both in the proposed combination and individually, fail to disclose at least the feature recited in claim 10 of a buffer layer disposed between an upper electrode layer and a lower electrode layer of a second electrode. In particular, again with reference to Fig. 3, Aziz discloses buffer layer 34 being in contact with second electrode (anode) 32 (the first electrode (a cathode) being formed on substrate 31). The Examiner asserts that the second electrode may be formed as upper and lower layers, based upon the statement in Aziz (paragraph 0074, lines 15-17):

[i]n addition, transparent or semitransparent thin layers of conductive carbon or conjugated polymers, such as polyaniline, polythiophene, polypyrrole and the like, having a thickness of, for example, from 50 Å to about 175 Å can be used as anodes.

The Examiner asserts that Aziz discloses a buffer layer (item 34, Fig. 3) in contact with the second electrode, and disposed between the upper electrode and the lower electrode (of the second electrode), relying upon Fig. 3. However, Aziz clearly fails to disclose the buffer layer 34 being disposed **between** any upper and lower layers of the second electrode 32. Likewise, Ogura clearly fails to disclose buffer layer 206 being disposed **between** layers of a second electrode. Accordingly, Aziz and Ogura, either individually or in the proposed combination, fail

to teach, disclose or suggest all of the elements of claim 10, and thus all of the elements of claims 11-14 depending from claim 10.

It is therefore respectfully submitted that a *prima facie* case for obviousness has not been established with respect to claims 1-5 or claims 10-14. Accordingly, it is respectfully requested that the rejection of claims 1-5 and 10-14 under 35 U.S.C. § 103(a) be withdrawn.

CONCLUSION

In view of the foregoing amendment and remarks, Applicants respectfully submit that the present application, including claims 1-5 and 10-14, is in condition for allowance, and such action is respectfully requested.

Respectfully submitted,

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March 1, 2007

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